

Notice of Allowability

Application No.

10/604,385

Examiner

Mitchell R. Slavitt

Applicant(s)

SWIZE, GREGORY EMIL

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to an amendment filed 10/7/05.
2. ☒ The allowed claim(s) is/are 2-16, 18-24, 26-48, and 51-55, renumbered as 1-50.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Reasons for Allowance

1. Claims 2-16, 18-24, 26-48, and 51-55 are allowed as the prior art does not teach or suggest the applicant's invention.

Independent claim 2 teaches a retract circuit for a data transducer carriage. The distinguishing element of the claim is an analog driver to receive control signals from said digital state machine, said analog driver having a programmable gain.

Independent claim 3 teaches a retract circuit for a data transducer carriage. The distinguishing element of the claim is wherein said digital state machine is user programmable to operate in constant voltage, velocity detect, float and pulse, and crash stop detect modes.

Independent claim 4 teaches a retract circuit for a data transducer carriage. The distinguishing element of the claim is wherein said digital state machine is programmed to detect a velocity of said data transducer carriage assembly.

Independent claim 18 teaches a mass data storage device. The distinguishing element of the claim is an analog driver to receive control signals from said digital state machine, said analog driver having a programmable gain.

Independent claim 19 teaches a mass data storage device. The distinguishing element of the claim is wherein said digital state machine is user programmable to operate in constant voltage, velocity detect, float and pulse, and crash stop detect modes.

Independent claim 20 teaches a mass data storage device. The distinguishing element of the claim is wherein said digital state machine is programmed to detect a velocity of said data transducer carriage assembly.

Independent claim 26 teaches a method for retracting a data transducer carriage assembly. The distinguishing element of the claim is providing an analog driver having a programmable gain to receive control signals from said digital state machine.

Independent claim 27 teaches a method for retracting a data transducer carriage assembly. The distinguishing element of the claim is wherein said providing a digital state machine comprises providing a digital state machine that is user programmable to operate in constant voltage, velocity detect, float and pulse, and crash stop detect modes.

Independent claim 28 teaches a method for retracting a data transducer carriage assembly. The distinguishing element of the claim is wherein said providing a digital state machine comprises providing a digital state machine that is programmed to detect a velocity of said data transducer carriage assembly.

Independent claim 29 teaches a method for retracting a data transducer carriage assembly. The distinguishing element of the claim is wherein said providing a digital state machine comprises providing a digital state machine that is programmed to detect an error velocity of said data transducer carriage assembly from a difference of a measured voltage across said data transducer driver from a predetermined voltage.

Independent claim 51 teaches a method for retracting a head assembly in a hard disk drive. The distinguishing elements of the claim are: establishing a retract voltage

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responsive to said measured velocity; applying said retract voltage to said VCM; and operating said hard disk drive in one of a plurality of selectable operating modes, wherein said operating said hard disk drive in one of a plurality of selectable operating modes comprises operating said hard disk drive in a constant voltage mode in which a constant retract voltage is applied to said voice coil motor when a retract signal is enabled.

Independent claim 52 teaches a method for retracting a head assembly in a hard disk drive. The distinguishing elements of the claim are: establishing a retract voltage responsive to said measured velocity; applying said retract voltage to said VCM; and operating said hard disk drive in one of a plurality of selectable operating modes, wherein said operating said hard disk drive in one of a plurality of selectable operating modes comprises operating said hard disk drive in a velocity detect mode in which drive signals are removed from said voice coil motor, a velocity of said head assembly is determined, and an appropriate constant retract voltage is applied to said voice coil motor.

Independent claim 53 teaches a method for retracting a head assembly in a hard disk drive. The distinguishing elements of the claim are: establishing a retract voltage responsive to said measured velocity; applying said retract voltage to said VCM; and operating said hard disk drive in one of a plurality of selectable operating modes, wherein said operating said hard disk drive in one of a plurality of selectable operating modes comprises operating said hard disk drive in a float and pulse mode in which drive

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signals are removed from said voice coil motor, and a repeating pulse is applied a predetermined number of times.

Independent claim 55 teaches a method for retracting a head assembly in a hard disk drive. The distinguishing elements of the claim are: establishing a retract voltage responsive to said measured velocity; applying said retract voltage to said VCM; and operating said hard disk drive in one of a plurality of selectable operating modes, wherein said operating said hard disk drive in one of a plurality of selectable operating modes comprises operating said hard disk drive in a crash-stop-detect mode in which a condition is which said head assembly is against the crash-stop and detected, and a constant voltage is applied to hold said head assembly thereagainst.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitchell R. Slavitt whose telephone number is (571) 272-7562. The examiner can normally be reached on M-F (6:30-4:00), 2nd Friday off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS *ms*
12/23/05



DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600